

TN

140

R3D5

ROSSITER WORTHINGTON RAYMOND
1840-1910

GEORGE F. KUNZ



Class TN 140

Book .R3D5



1840

ROSSITER WORTHINGTON RAYMOND

1910

**“To be seventy years young is sometimes far more cheerful
and hopeful than to be forty years old.”**

—O. W. Holmes.



DINNER GIVEN TO
ROSSITER
WORTHINGTON
RAYMOND
BY HIS FRIENDS
IN COMMEMORATION
OF HIS
SEVENTIETH BIRTHDAY
APRIL 27, 1840

SATURDAY
APRIL THE THIRTIETH
ONE THOUSAND NINE
HUNDRED AND TEN
THE PLAZA
NEW YORK





1863

Sarah
Mellen
Dwight

1910

Rossiter
Worthington
Raymond

March 3

COMMITTEE

- E. Gybbon Spilsbury, *Chairman*, New York, N. Y.
John Birkinbine, Philadelphia, Pa.
David W. Brunton, Denver, Colo.
J. Parke Channing, New York, N. Y.
Samuel B. Christy, Berkeley, Cal.
David T. Day, Washington, D. C.
Philip T. Dodge, New York, N. Y.
James Douglas, New York, N. Y.
Henry S. Drinker, South Bethlehem, Pa.
Arthur S. Dwight, New York, N. Y.
Theodore Dwight, New York, N. Y.
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B. F. Fackenthal, Jr., Easton, Pa.
Bernard Fernow, Toronto, Ontario, Canada.
Frank Firmstone, Easton, Pa.
John Fritz, Bethlehem, Pa.
James Gayley, New York, N. Y.
John Hays Hammond, New York, N. Y.
Henry O. Hofman, Boston, Mass.
Henry M. Howe, Bedford Station, N. Y.
Alexander C. Humphreys, New York, N. Y.
C. Wallace Hunt, New York, N. Y.
C. Warren Hunt, New York, N. Y.
Robert W. Hunt, Chicago, Ill.
W. Renton Ingalls, New York, N. Y.
Julian Kennedy, Pittsburg, Pa.
Charles Kirchhoff, New York, N. Y.
Wheaton B. Kunhardt, New York, N. Y.
George F. Kunz, New York, N. Y.
Albert R. Ledoux, New York, N. Y.
Frank Lyman, New York, N. Y.
Charles Macdonald, New York, N. Y.
T. Commerford Martin, New York, N. Y.
George W. Maynard, New York, N. Y.
Eben E. Olcott, New York, N. Y.
Edward W. Parker, Washington, D. C.
Robert M. Raymond, Mexico City, Mexico.
Robert H. Richards, Boston, Mass.
William L. Saunders, New York, N. Y.
Henry G. Stott, New Rochelle, N. Y.
William H. Wiley, New York, N. Y.
Frank S. Witherbee, Port Henry, N. Y.
Joseph Struthers, *Secretary*,
No. 29 W. 39th St., New York, N. Y.
D. M. Riordan, *Treasurer*,
No. 165 Broadway, New York, N. Y.

M E N U

Hors d'oeuvres à la russe

Potage queue de boeuf

Noix panachées

Olives

Céleri

Filets de sole anglaise, Parmentier
Concombres en surprise

Quartier d'agneau à la grecque
Petits pois à la française

Sorbet à l'ananas

Asperges nouvelles, sauce hollandaise

Pigeonneaux rôtis
Salade de saison

White Rock

Bombe Excelsior

Petits fours

Fruits

Brauneberger

Café

SPEAKERS

JAMES DOUGLAS

Presiding

E. GYBBON SPILSBURY

Presentation of Communications from Foreign Societies

RAWLINSON TENNANT BAYLISS

Award of Medal from the Institution of Mining and Metallurgy

JULIO F. SORZANO DE TEJADA

Société des Ingénieurs Civils de France

FRANK DAWSON ADAMS

President Canadian Mining Institute

C. J. PARTINGTON

Vice-President Mining Society of Nova Scotia

LYMAN ABBOTT

JOHN A. BENSEL

President American Society of Civil Engineers

GEORGE WESTINGHOUSE

President American Society of Mechanical Engineers

ROBERT W. HUNT

Past President American Institute of Mining Engineers

THOMAS COMMERFORD MARTIN

Past President American Institute of Electrical Engineers

WILLIAM LAWRENCE SAUNDERS

Address to Mrs. Raymond

JAMES DOUGLAS

DOCTOR RAYMOND

BRIEF ADDRESSES BY FRIENDS PRESENT

THE GRAND CAÑON

A thought of God, on earth expressed!
The silence of His perfect rest;
The patience of eternal power;
The ceaseless change from hour to hour;
Forms in alternate gloom and flame
That bide yet evermore the same,
And do but wear such fitful guise,
Reflected in our human eyes,
Which compass only in their range
The things that change, or seem to change;
The blended hues of heavenly birth
Beyond the tenderest tints of earth,
That fill and flood her spaces wide
With surges of celestial tide;
The beauty of that awful brink
Where meaner thoughts in rapture sink,
And souls see clear, though eyes grow dim,
While space and time are lost in Him!

Methinks I could not faint or flee
In any conflict yet to be,
Whatever pathway must be trod,
Might I but keep this thought of God!

R. W. R.

July, 1889



The Grand Cañon of the Colorado



Silver Service Presented to Dr. Raymond



The Great Western
1858



Heidelberg
1859

Glück Auf



Freiberg
1860-61

.U.S.A.



1861-64



Christmas Stories



Plymouth Church
1857



American Institute of Mining Engineers

Ingénieurs Civils de France

Iron and Steel Institute

Institution of Mining and Metallurgy

Canadian Mining Institute

Mining Society of Nova Scotia

American Philosophical Society

Loyal Legion

Society of the Army of the Potomac

Lafayette College, Ph.D. (1868)

Lehigh University, LL.D. (1906)



SCIENTIA ET LITERAE

PUBLICATIONS

American Journal of Mining
Engineering and Mining Journal
Mineral Resources of the United States
The Law of the Apex
Transactions of the American Institute of Mining Engineers
Christmas Stories
Etc., etc., etc.

CONGRATULATIONS AND
ADDRESSES

“The monumental pomp of age
Was with this goodly personage;
A stature undepressed in size,
Unbent, which rather seemed to rise,
In open victory o’er the weight
Of seventy years, to loftier height.”

—Wordsworth.

Dinner to Rossiter Worthington Raymond

April 30, 1910

In Commemoration of His Seventieth Birthday

Committee of Arrangements

E. GYBBON SPILSBURY, *Chairman*

JAMES DOUGLAS

CHARLES WALLACE HUNT

ANTON EILERS

FRANK LYMAN

GEORGE W. MAYNARD

GEORGE F. KUNZ

ALBERT R. LEDOUX

HENRY G. STOTT

JAMES GAYLEY

THEODORE DWIGHT

WILLIAM L. SAUNDERS

JOSEPH STRUTHERS, *Secretary*

D. M. RIORDAN, *Treasurer*

DR. JAMES DOUGLAS, *Presiding Chairman*

DR. DOUGLAS, *Chairman*: Ladies and Gentlemen, I wish to relieve your minds, which must be very much troubled in looking at this long list of speakers. I am going to request the speakers, with the exception of Dr. Abbott and Dr. Raymond, to confine themselves strictly to five minutes instead of the allotted six. I have a watch before me, and they won't be offended, I hope, if I rap to warn them when the five minutes have expired.

I do not exactly understand why, when a man has reached his seventieth birthday, it should be published to the world, and he should be reminded that he is crossing the horizon of life and is

about to go over the Divide. I suppose that it is really to contradict the conclusion of that Hebrew pessimist of old who considered that when we have passed the seventieth milestone we might as well consider that we have reached the eightieth, when what strength is left is only labor and sorrow. I imagine, however, that he was a young man who was looking at old men from a young man's point of view. Shakespeare's view of old age is hardly more encouraging. The sixth age, with its shrunken shanks and manly voice turning towards childish treble, as a prelude to second childishness—*sans* teeth and *sans* eyes—is not a true picture; otherwise, why should we ask our friend to celebrate his seventieth birthday in partaking of a banquet if *sans* teeth.

As to the power of vision, as life advances we may need the aid of spectacles, but the longer we live the further we can see—whether looking backward or forward or into the heart of things. We can see further into the motives of men and we look more kindly and truthfully on human eccentricities, for, as the years roll by, we have experienced so many proofs of human kindness where we least expected to find it. And, unless we read amiss the progress made in science within our own memories, we must recognize that the sharp lines disappear between the animate and the inanimate, between the visible and the invisible, between life and death, and between man and God. I say this in all seriousness and I know that nobody feels it more keenly than our friend. We have lived to see the Roentgen rays, which demonstrate that nothing is really invisible; then Monsieur and Madame Curie separate salts of radium as a substance which is simply emblematic of immortality; and Mr. Burbank trains plants just as he would have trained animals. All these revelations in the physical world, indicating still deeper changes in our estimate of the spiritual life, have been the product of our friend's seventy years of life. Instead, therefore, of condoling with him, we must heartily congratulate him, not only because he has

witnessed this progress, which others of us have also been privileged to do, but because he possesses that keen insight into things spiritual and invisible which so few enjoy.

I will now ask Mr. Spilsbury to read certain communications from friends of our friend, who, to their great regret, could not be present themselves to greet and congratulate him.

MR. SPILSBURY: Gentlemen, before undertaking the duty imposed upon me by the Toastmaster, I have an announcement to make as chairman of the committee. This dinner, which we give to our venerable young friend to-night, is the first of a series of four to be repeated every ten years, at which you are all invited to be present. It is my intention to act as chairman for each of the next three functions, after which I intend to resign in favor of some older member.

NEW YORK, April 19, 1910.

DEAR MR. MARTIN:

I deeply regret that preparations for early departure and engagements in Washington will prevent my being present at the dinner given to Dr. Raymond by his friends, who are legion, none of them, I flatter myself, much closer than I. I hesitate to count the number of years his name has been a household word in my circle, nor can I remember the slightest incident which was not agreeable in all our intercourse. We have been happy to meet, sorry to part, and happy to meet again. Dr. Raymond is a real good fellow, one who somehow or other creeps into the heart and nestles there.

Of his services to his profession I need not speak. There will be other friends present who will tell that story; but as a man and friend I enter him in competition for the first prize with the entire membership of our society.

Long and happy life to him, and "Where e'er he be, with such as he may I be saved or ——," eh—eh—hanged!

I feel at this moment as if I were shaking him by both hands vigorously and wish him godspeed.

Always very truly yours,

ANDREW CARNEGIE.

UNITED STATES SENATE

WASHINGTON, D. C., April 29, 1910.

MY DEAR MR. SPILSBURY:

I have learned with pleasure that the seventieth anniversary of the useful life of study and accomplishments of Dr. Rossiter W. Raymond is to be appropriately celebrated.

To those familiar with Dr. Raymond, it is unnecessary to call attention to his varied and accurate knowledge and his ability to make practical and most beneficial use of it. Always a student and investigator of the authorities of the history, so full of charm, of the lives of those who have by their studies and experiences developed science, he has been none the less, but I think I may well say, all the more, a practical engineer, a practical geologist, a practical mineralogist, and a practical miner, bringing to his work his scientific attainments, the fruits of his investigations, both in the works of scientists and in the communications of the miner not fully realizing the value of his own communications. Those brilliant manifestations of capacity have been intensified by the indefatigable industry which he has brought to the mastery of every subject, of every problem, he has set to master or solve. In the preparation for trial of great controversies in which lawyers of ability and experts of great experience have taken part, Dr. Raymond displayed his generalship and the promptitude and exactness of the operations of his mind, his ability to seize the real important features of the case, and, like the consummate general, marshaled his forces in their behalf. Always fair, always accurate, always frank, these conclusions, sometimes lacking in great experts and men of much ability, contributed to the moral force and conviction which his eloquent presentation of facts always possessed. Prompt and fair in answering, quick to detect an opening made by the cross-examining counsel, his most signal successes have sometimes been in intellectual duels with lawyers backed in the display of their abilities by the advice and suggestions of trained experts at their elbows.

Dr. Raymond in these controversies always maintained himself with dignity and vigor, and so far as I can recall, in no instance was his presentation in chief weakened by the cross-examination, while oftentimes it was most appreciably strengthened.

It was a pleasure to be associated in litigation of this character with Dr. Raymond. His suggestions were timely, apt, and effective, and even to be

opposed to him was something of a liberal education and training in the art of vigorous but fair controversy.

I regret my inability to be present at this dinner, and there, to say, so well as I may, what I know I have most inadequately written.

With kind regards to Dr. Raymond and the hope that there may be many anniversaries of his yet to be celebrated, I am,

Very truly yours,

CHARLES J. HUGHES, JR.

MONTÉ CARLO, MON., April 18, 1910.

MY DEAR RAYMOND:

I would like to add my mite in the way of a hearty congratulation on this important occasion, and regret that I am unable to be present to confirm it by a hand-shake.

Very truly,

W. B. COGSWELL.

DENVER, COLO., April 30, 1910.

MY DEAR DOCTOR RAYMOND:

Although barred by accident and distance from the pleasure of being with you to-night, I cannot resist the desire to send a long-range note of congratulation, and hope that the testimonial tendered you to-night will be as hearty and enthusiastic as it is opportune and deserved. The long years of willing and efficient service you have given to the American Institute of Mining Engineers have built it up steadily until now, in point of importance and professional standing, it occupies a position second to none; while its members residing in every portion of the world contribute papers which, thanks to your painstaking and brilliant editing, constitute by far its most valuable assets.

However large the assemblage which meets to do you honor in the Plaza on your seventieth anniversary, it forms but a small portion of your friends and admirers, thousands of whom will be present in spirit to wish you a long and enjoyable life sweetened by the consciousness of an elevating, ennobling work, well and faithfully performed. For our absent members, allow me

to record the wish that the seventieth mile-stone may be far from the end of the journey and that you will still be able to give many useful, happy years to the service of the Institute which is already so deeply obliged to you.

With best wishes for many joyful returns of the day, I remain,

Yours most sincerely,

D. W. BRUNTON.

ROUNTON GRANGE, NORTHALLERTON, March 30, 1910.

MY DEAR MR. SPILSBURY:

I beg to be allowed to join with those who are honoring my old friend, Dr. Rossiter W. Raymond, in offering him my heartiest congratulations on the seventieth anniversary of his birth. I wish I could be present in the flesh, but I am with you in the spirit, and I unite with you in wishing for the Doctor many more years to enliven and encourage his multitude of friends by his genial and humorous outlook on life.

Since the festivity includes (most properly) the gentler sex, my wife would like very much to be allowed to associate herself with these good wishes. I remain,

Yours very truly,

HUGH BELL.

TUCSON, ARIZONA, April 24, 1910.

MY DEAR MR. SPILSBURY:

I greatly regret that I cannot participate in the dinner to my dear friend Raymond, but cheerfully seize the opportunity of sending heartfelt congratulations.

W. P. BLAKE.

CROY, CALIFORNIA, April 21, 1910.

MY DEAR SPILSBURY:

The invitation to attend the anniversary dinner to Dr. Raymond in commemoration of his seventieth birthday came duly to hand, and I have been hoping that things would so shape themselves that I could be present on that occasion, but I am sorry to say that it will be impossible for me to be there.

My acquaintance with Dr. Raymond extends back about thirty-five years. As I remember him then, he has not changed much since that time, but has always been the same jovial good-hearted fellow, always ready with a cheerful word, and ready to help by word or deed any who needed it. Would there were more like him, that can truly say that the world is better because he has lived.

Please extend to the Doctor my hearty congratulations. May his shadow never grow less; may he have many happy returns of the day, and may we all be on hand to celebrate his eightieth anniversary.

Sincerely yours,

S. T. WELLMAN.

UNIVERSITY OF CALIFORNIA

BERKELEY, CAL., April 21, 1910.

MY DEAR MR. SPILSBURY:

I regret that it will be impossible for me to attend the dinner on April 30, but I shall be there in spirit to congratulate the man who more than any one living has brought the profession of Mining Engineering to the high place it now occupies among the professions of our country.

S. B. CHRISTY.

WASHINGTON, D. C., April 24, 1910.

MY DEAR MR. SPILSBURY:

It is with keen regret that I find myself prevented from attending the dinner to be given to Doctor Raymond on the evening of the 30th.

I can assure you that any testimonial of esteem that might be tendered him could appeal to none of his many friends more strongly than to me, who for so many years have felt the same affectionate regard for his character and attainments that were felt for him and left as legacy by my father before me.

May I ask you to extend to him my heartiest congratulations, together with the sincerest wishes that he may live to receive in years to come many more such evidences of the regard of his host of friends as this testimonial dinner conveys.

CHAS. C. WORTHINGTON.

U. S. GEOLOGICAL SURVEY

WASHINGTON, D. C., April 29, 1910.

MY DEAR MR. SPILSBURY:

I greatly regret my inability to join the many friends of Doctor Raymond on the occasion of according him the honor that is his due as the dean of mining engineers. In asking you to extend my congratulations and best wishes I will explain my absence as occasioned by my official obligations to a Congressional investigation committee. In that service I think I have had the opportunity to present the engineer's view of conservation in a way quite in accord with Doctor Raymond's inimitable contributions on the subject.

Yours very cordially,

GEO. OTIS SMITH.

NEW YORK, April 25, 1910.

MY DEAR MR. SPILSBURY:

It is a great disappointment to me that at the last hour I am prevented from joining in the enthusiastic and cordial demonstration of esteem and affection for our friend and confrère, Dr. Raymond.

If my tongue could adequately respond to the dictates of my heart, I would pay to my friend Rossiter Raymond a tribute compared with which his own eloquent eulogies would seem stale, flat and unprofitable.

But Dr. Raymond needs no eulogy in a gathering of engineers, in whatsoever part of the civilized world assembled. The American Institute of Mining Engineers, built up by his able and self-sacrificing labor of years, is his glorious monument *aere perennius*. This great work alone—and he has performed many other great achievements—entitles Dr. Raymond to the recognition universally accorded him as the head of the mining profession: Ajax first, the rest nowhere.

As we grow older and incline more to indulge in retrospect and in philosophic contemplation, we often ask ourselves the question: What constitutes success? Is it the amassing of a fortune, is it the winning of fame, of power?

“Fame's but a hollow echo; gold, pure clay;
Power, the darling of but one short day.”



WERTGESCHÄTZTER HERR RAYMOND!
HOCHGEEHRTER HERR DOCTOR!

DIE hohen VERDIENSTE, DIE Sie sich durch Ihre langjährige Tätigkeit in der Geschäftsleitung des „American Institute of Mining Engineers“ erworben haben, werden am heutigen Tage, an dem Sie die 70. Wiederkehr Ihres Geburtstages feiern, durch Ihre zahlreichen amerikanischen Freunde gebührend gewürdigt. Ihre grossen Erfolge verdanken Sie Ihrer unermüdlichen Hingabe, Ihrer nie versagenden Sachkenntnis, Ihrem vornehmen literarischen Geschmack und der Würde der philosophischen Natur, durch die Sie sich von jeher ausgezeichnet haben. Es gereicht uns zur grössten Freude und Genugtuung, uns den Glückwünschen, die Ihre amerikanischen Freunde Ihnen zu Ihrem Ehrentage darbringen, aus vollem Herzen anzuschliessen und Ihnen die Versicherung zu geben, dass wir Ihre Tätigkeit ebenso hoch zu schätzen wissen, wie Ihre engeren Landsleute, zumal da die Arbeiten Ihres Institutes der internationalen hüttenmännischen Welt und damit auch uns zugutegekommen sind. ~~~~~ Wir benutzen aber auch gern die Gelegenheit, um Ihnen unseren herzlichsten Dank auszusprechen für alle die Liebe und Fürsorge, die Sie zahlreichen unserer Landsleute beim Besuche Ihres Heimatlandes zugewendet haben. ~~~~~ Indem wir hoffen, dass Ihnen noch auf lange Jahre hinaus volle Gesundheit beschieden sein möge und Sie noch weiterhin zum Gemeinwohle des Berg- und Hüttenfaches wirken werden, sind wir

in bekannter Wertschätzung

DER VORSTAND DES VEREINS DEUTSCHER EISENHÜTTENLEUTE

Der Vorsitzende:

Springer
Königl. Kommerzienrat

Der Geschäftsführer

Reinhold

Düsseldorf, den 30. April 1910.

What a disillusionment of the fond hope of ambitious youth, if hard-earned success—and there is no easy road by which it is reached—means nothing more! What a futility; how poorly requited is one, if success does not bring with it contentment and happiness. Without the affection and esteem of our contemporaries, real, abiding success is not possible. Dr. Raymond, you have achieved real, abiding success, and it is the wish of thousands and thousands of friends and admirers, scattered through the four quarters of the globe, that you may live many more years in the enjoyment of their deep affection and high esteem.

JOHN HAYS HAMMOND.

VEREIN DEUTSCHER EISENHÜTTENLEUTE

(*Translation*)

DÜSSELDORF, April 30, 1910.

DEAR DOCTOR RAYMOND:

The brilliant services attaching to your long career as Secretary of the American Institute of Mining Engineers are, on this seventieth anniversary of your birthday, receiving due appreciation from your numerous American friends. The great results achieved by you are the outcome of your tireless devotion, your never-failing professional knowledge, your good literary taste, and the philosophic dignity by which you have ever been distinguished. It affords us peculiar pleasure and satisfaction to be able heartily to join in the congratulations presented by your American friends on this your day of honor, and to assure you that we have no less high an appreciation of your efforts than your own countrymen, the more so that the work done by your Institute has redounded to the advantage of the whole world of international metallurgy, and therewith to our own.

But we also gladly hail the opportunity of expressing our hearty thanks to you for all the kindness and attention which you have shown to so many of our countrymen who have paid visits to your land.

Wishing you many more years of unbroken health and a long period of useful activity for the commonwealth of the mining and metallurgical professions. We remain, with the expression of our highest esteem,

The Council of the Verein deutscher Eisenhüttenleute,

SPRINGORUM, Chairman.

SCHRODTER, Secretary.

THE IRON AND STEEL INSTITUTE

LONDON, April 14, 1910.

DEAR MR. SPILSBURY:

With reference to the celebration in connection with Dr. Rossiter Raymond's seventieth birthday, a short illuminated address on vellum has now been prepared, and I hope to be able to dispatch this to you by mail on Saturday, April 16, trusting that it will reach your hands in good time. The complimentary blank card for the dinner which you sent to Sir Hugh Bell has been returned to Mr. Charles Kirchhoff with the request that he would be good enough to undertake, on this occasion, to act as the representative of the Iron and Steel Institute and present the address. Believe me,

Yours very truly,

C. C. LLOYD, Secretary.

THE INSTITUTION OF MINING AND METALLURGY

LONDON, E. C., April 20, 1910.

DEAR MR. SPILSBURY:

I have much pleasure in enclosing a copy of the letter addressed by me to-day to Mr. R. T. Bayliss, who, as you are aware, will represent my Council at the banquet.

The decision of my Council to bestow upon Dr. Raymond the highest honor in the power of the Institution to confer, will, I am sure, be a source of gratification to you in common with his numerous friends throughout the whole mining world.

Dr. Raymond's persistent energy and extraordinary capacity for work have been a source of inspiration to me as well as to hundreds of other admirers; but the standard of his achievements is so high that very few of us can even hope to attain it.

I shall be grateful if you, as Chairman of the Banquet Committee, will convey to Dr. Raymond an expression of my affectionate regard and esteem and of my most cordial congratulations.

With best wishes for the entire success of your banquet, and with kind regards, I am, dear Mr. Spilsbury,

Yours faithfully,

C. McDERMID, Secretary.



THE IRON AND STEEL INSTITUTE.

To
Rossiter Northington Raymond, Ph.D., LL.D.

We, the President Council and Members of
the Iron and Steel Institute, desire herewith to offer
to you, our distinguished **Honorary Member**, our most
cordial greetings on the occasion of the celebration, on
April 30th, 1910, of the attainment of your seventieth
birthday. It affords us heartfelt pleasure to be able,
on so auspicious an occasion, to join with others of
your friends in all parts of the world in paying a
slight tribute of regard to the **Founder** of our Sister
Society the **American Institute of Mining Engineers**,—
in the advancement of whose objects and influence you
have since so unremittingly laboured. Long may you
continue to enjoy the fruits of that labour.

Given under our Hand and Seal
this 14th day of April 1910.

Hugh Bell **President.**

C. P. Lloyd **Secretary.**



NEW YORK, April 26, 1910.

DEAR MR. SPILSBURY:

Without warning I am called to Canada in a matter admitting of no delay. I deeply regret that I shall be unable to join you in paying tribute to the character and accomplishments of Dr. Raymond. His record should inspire and encourage all younger men.

He is living evidence of the fact that clean, wholesome and progressive methods, and a due regard for one's fellow-men, are not inconsistent with success.

Yours truly,

PHILIP T. DODGE.

THE POLYTECHNIC INSTITUTE

BROOKLYN, N. Y., April 29, 1910.

DEAR DR. RAYMOND:

At a meeting of the Board of Trustees of the Polytechnic Institute, held last evening, I was instructed to extend to you on your seventieth birthday the warmest greetings and cordial congratulations of your fellow-members of the Board. They heartily concur in the testimonial which is being rendered in your honor by your friends in the engineering profession. As the first graduate of the Polytechnic, as an alumnus of whom it is proud, as an engineer of great scientific accomplishment, as a man, friend, and trustee who has by his personal character and professional services brought honor and credit to the Polytechnic, you are held in great respect and admiration by every one connected with that institution. We would wish your friends to know that you are a man honored in your own country, and on this occasion we would join with them in testifying to your great worth as a man and as a scientist.

Cordially yours,

FRED. W. ATKINSON.

Two telegrams, as follows:

MEXICO CITY, April 30, 1910.

CHAIRMAN, RAYMOND DINNER:

Congratulations. Good wishes. Regret cannot be present. In honoring Raymond the profession throughout the world is honored.

ALFRED JAMES.

SAN FRANCISCO, CAL., April 30, 1910.

In behalf of San Francisco members of the American Institute of Mining Engineers, we extend congratulations and heartiest good wishes for many happy returns of the day.

H. F. Bain, E. H. Benjamin, F. W. Bradley, Albert Burch, S. B. Christy, Francis Drake, Courtenay DeKalb, Bertram Hunt, Charles Janin, C. H. Lindley, J. H. Mackensie, C. W. Morrill, W. S. Noyes, W. C. Ralston, M. L. Requa, H. W. Turner, C. G. Yale.

DR. DOUGLAS: Representatives of kindred societies have come from North, South, East and West, to express in person and on behalf of their societies their admiration for Dr. Raymond, and to greet him on his seventieth birthday.

These societies have at various times conferred upon him the distinction of honorary membership, so that their testimony, presented to-night, is not evidence of a new or complimentary opinion, called forth by this festive occasion, but the confirmation of a deliberate judgment.

Among them, on the other side of the Atlantic, is one not as old as our American Institute of Mining Engineers, but already eminent in the technical and industrial world, the Institution of Mining and Metallurgy, having its headquarters in London. Mr. Rawlinson T. Bayliss, the vice-president of that institution, has been delegated not only to express its estimate of the work that Dr. Raymond has done in its field of activity, but also to confer upon him a more substantial symbol of its esteem.

**ADDRESS OF RAWLINSON T. BAYLISS, VICE-PRESIDENT
OF THE INSTITUTION OF MINING AND
METALLURGY**

Mr. Chairman, Dr. Raymond, Ladies and Gentlemen: I think my deep sense of the importance of this occasion can be, perhaps, best expressed, when I say that I have crossed the Atlantic for the purpose of attending this banquet to-night, and with the affectionate desire to add my mite to the many good wishes and expressions of appreciation which I felt certain would be forthcoming on this occasion. When I heard what was contemplated, I felt that this was the least I could do; and, with the grateful recollection of services rendered to me in the past, and of an invaluable friendship with Dr. Raymond that I had been permitted to enjoy for now nearly a quarter of a century, I should have been only too glad if the opportunity had presented itself of doing a great deal more.

But, as Dr. Douglas has said, I am here in an official capacity, having been deputed by the president and Council of the Institution of Mining and Metallurgy of London, of which I have the honor to be a vice-president, to transmit to Dr. Raymond on their behalf their congratulations on the seventieth anniversary of his birthday, and to read to him the resolutions passed at the Council meeting on the day that I left London. They are as follows:

“At a meeting of the Council of the Institution held to-day the following resolutions were cordially and unanimously adopted:

“1. That the Council of the Institution of Mining and Metallurgy express their hearty congratulations to Dr. Rossiter Worthington Raymond, Honorary Member of the Institution of Mining and Metallurgy, upon the celebration of his seventieth birthday, and their best wishes for his continued welfare and happiness.

“2. That the gold medal of the Institution of Mining and Metallurgy be, and it is hereby, awarded to Dr. Rossiter Worthington Raymond, secretary of the American Institute of Mining Engineers,

on the occasion of the celebration of his seventieth birthday, in recognition of his eminent services and lifelong devotion to the science and practice of mining and metallurgy and of his numerous and valuable contributions to technical literature."

These resolutions were passed unanimously by the Council, and I venture to say that if time had permitted the reference of them to the members of the Institution itself, numbering now not far short of 2,000, they would have met with the same unanimous approval.

For wherever a mining engineer exists to-day, whether he speaks the English or any other language, wherever mining is being carried on as a science, the name of Rossiter W. Raymond is familiar, and is held in universal esteem!

I should like to add that the gold medal of the Institution of Mining and Metallurgy is the highest award which it has the power to bestow. It is not given indiscriminately; it is not confined to members of the Institution; it is not awarded for any specific, limited reason. It is in fact the "order of merit" of the Institution of Mining and Metallurgy, and it is bestowed not necessarily upon mining men, but upon any man who, in any scientific profession, proves himself to be head and shoulders above his fellows, and who, by his work and influence for good in the profession of which he is a member, has become entitled to this honor.

I think Dr. Raymond will not be ashamed of the company in which his name will be placed upon the roll of those who have received this award.

To mention only two members who have received it somewhat recently: At the Centennial Celebration of the Geological Society of London, this medal was given to Sir Archibald Geikie, in recognition of the great services he had rendered to the science of geology; and, a year after, it was awarded to Dr. James Douglas, our Chairman on this occasion, for his great services to mining and metal-



Gold Medal of the Institution of
Mining and Metallurgy

lurgy, and in other fields familiar to those who are present to-night.

With this brief explanation, Dr. Raymond, I now have the pleasure to present to you the gold medal, which, as I say, is the highest honor our society can award. In accepting it, you will confer an honor upon the Institution of Mining and Metallurgy.

Let me add one word in my personal capacity: I feel that the English language, or at any rate so much of the English language as I command, is inadequate to express all that I feel with regard to my friend, Dr. Raymond. He has been, in very truth, a guide, philosopher and friend to me for the past twenty-five years—a guide in business matters and in litigation (mining litigation, of course), in which he proved himself to be a very sound guide; a philosopher, whose frequent conversations with me during the leisure moments of our business companionship have had, as I frankly admit, a great deal to do with the direction in which my thoughts were turned, and, as I also candidly admit, very much to my advantage. In addition to that, I have had his invaluable friendship for the same period; and those of you who have likewise enjoyed it, know what that means.

What can I say to you, my dear old friend? I think I will content myself by wishing you everything that your heart can desire, and praying that God's blessing may be with you for the rest of your days!

DR. DOUGLAS: Although Dr. Raymond does not claim the specific degree of civil engineer, he has often declared, and is himself an illustration of the proposition, that a thoroughly competent mining engineer must understand civil engineering. At all events, the famous Société des Ingénieurs Civils de France conferred upon him long ago the distinction of honorary membership; and a representative of that society, Mr. Sorzano de Tejada, is here to-night in person.

ADDRESS OF JULIO F. SORZANO DE TEJADA, REPRESENTATIVE OF THE SOCIÉTÉ DES INGÉNIEURS CIVILS DE FRANCE

Mr. Chairman, Ladies and Gentlemen: I have been requested by the Society of Civil Engineers of France to read to you this letter:

PARIS, le 8 Avril, 1910

MONSIEUR LE DOCTEUR ROSSITER W. RAYMOND:

Ancien Président de l'Institut Américain des Ingénieurs des Mines.

Membre Honoraire de la Société des Ingénieurs Civils de France.

Le Président et les Membres du Comité et de la Société des Ingénieurs Civils de France sont heureux de se joindre à leurs Collègues Américains, pour fêter avec eux le soixante-dixième anniversaire de la naissance de Monsieur le Docteur Rossiter W. Raymond.

La Société des Ingénieurs Civils de France se félicite également de pouvoir compter Monsieur le Docteur Rossiter W. Raymond au nombre de ses Membres les plus éminents et d'avoir pu lui témoigner l'estime en laquelle elle tient sa personnalité en lui décernant depuis 1875, le titre de Membre d'Honneur de la Société des Ingénieurs Civils de France.

Le Président,

J. BERGERON.

It indeed gives me great pleasure in presenting this letter to have the opportunity to express to Dr. Raymond, in my own behalf, the admiration and pride, which, as an engineer, I feel in the success of the seventy years of his useful, honorable and beautiful life.

DR. DOUGLAS: While our American Institute of Mining Engineers covers specifically under its title and by its rules both Canada and Mexico, it has enjoyed with the Canadian Mining Institute peculiarly friendly relations. The two societies are working with the same ends in view; nothing divides them but a line which is, geographically, imaginary, whatever it may be politically.

Dr. Frank Dawson Adams, president of the Canadian Mining Institute, is here to express to us what he can better say than I can forecast.

**ADDRESS OF FRANK DAWSON ADAMS, PRESIDENT OF
THE CANADIAN MINING INSTITUTE**

Mr. Chairman, Dr. Raymond, Ladies and Gentlemen: Plutarch, in his life of Theseus, tells us that the geographers of his day in making their maps of the world crowded into the edges of their maps parts of the world which they did not know about, adding notes in the margin to the effect that beyond this there was nothing but sandy deserts full of wild beasts, unapproachable bogs, Scythian ice or a frozen sea. I am afraid that my respected country has in many other parts of the world been relegated in times past to the limits of the map; but now I hope that the ice has somewhat melted and that the desert does not appear quite so full of wild beasts as it did in the past. Canada now has a population of eight millions. Within a very few years it will have completed its three trans-continental railways, crossing the Dominion from the Atlantic to the Pacific, with excellent inland communication between all the settled portions of the country, and a large and very rapidly growing export trade to all quarters of the world.

Of the lines upon which the country has advanced none are more striking than the growth which has been made in the mineral industries. Twenty years ago, in 1889, the total mineral output was valued at only \$14,000,000; ten years ago it had risen to nearly \$50,000,000, and last year it was \$90,500,000.

With this great development in the mineral resources of the Dominion came the great growth of the Canadian Mining Institute. The Institute now has 1,000 members, and we have had on the average during the last several years two hundred present at the regular meetings of the Institute.

The Canadian Mining Institute was modeled to a great extent on the American Institute of Mining Engineers, and you are all aware

of the great services which Dr. Raymond has rendered to that illustrious society. We feel also that we have a certain proprietary interest in Dr. Raymond, and we feel that the services which he has rendered to the American Institute have in a manner been reflected upon us. For that reason I may say that the Canadian Mining Institute feels a particular interest and a particular affection for Dr. Raymond, and they have deputed me to come here this evening to express to him on their behalf the hearty congratulations which they extend.

We have a number of members in common, a number of members in the American Institute are members also of the Canadian Institute, and among the most distinguished of those we hold Dr. Douglas, who acts as toastmaster to-night, who came from us, and has made a great name for himself in this country, and from time to time returns to remind us of old times, so that we also feel a certain proprietary interest in Dr. Douglas as well.

In Dr. Raymond we all admire especially his excellent command of the English language, the very admirable manner in which he expresses what he has to say in the many papers which he has contributed to the transactions of the American Institute of Mining Engineers.

The story is told of a certain undergraduate at Oxford who had to write an essay for submission to his tutor. He had the choice of two subjects upon which to write, but when the tutor came to read the essay, he found it to be well expressed but extremely hazy, and he accordingly said, "By the way, Mr. Blank, which of the two subjects did you select?" The undergraduate after pondering for a minute replied, "I really forget just now which it was; but I think as we go on it will transpire."

With Dr. Raymond there is no doubt whatever as to what he wishes to say, and there is no doubt that he expresses himself in the most elegant and precise language. It has been said by some

one that "after fifty years, virtue becomes almost a habit." Dr. Raymond has passed his fiftieth year and has before him that wonderful course of life in which virtue has become a habit and with which happiness follows, therefore, as a result. We congratulate him upon his achievements in the past and hope that he may be with us for many happy years to come.

In conclusion, I would convey to Dr. Raymond, on behalf of the Canadian Mining Institute, the warmest congratulations, and the very best wishes.

DR. DOUGLAS: Dr. Raymond has been very intimately associated with mining of coal in this country, and it was, therefore, a grateful recognition of what this interest owes to the Doctor when the Nova Scotia Institute of Mining Engineers sent a representative. Unfortunately, steam power failed to bring him, but electricity carried this message to us:

I regret exceedingly being unable to reach New York to attend dinner as delegate from Mining Society of Nova Scotia. Joining you in spirit, I extend to Dr. Raymond the hearty good wishes of his many friends and admirers in the province.

G. J. PARTINGTON.

DR. DOUGLAS: As we already know, Dr. Raymond has not confined his activity to mining, or even to general engineering; and Rev. Dr. Lyman Abbott will kindly tell us of certain other spheres of intellectual activity in which Dr. Raymond has not only been engaged, but in which, as in everything else, he has distinguished himself.

ADDRESS OF REV. LYMAN ABBOTT, D.D.

Mr. Chairman, Ladies and Gentlemen: I thought I knew Dr. Raymond pretty well, but I was surprised to find that this was his seventieth birthday. He knows so much more than I do, that I thought he was older than I am, and I find I am his senior.

Sailor, soldier, engineer, writer, author, teacher, biblical critic, I am asked to tell you in six minutes what are his characteristics in this kaleidoscopic life of his. I wave them all aside, and I speak only of his characteristics in one aspect: what he is as a friend of his pastor.

It has been the rule of my own life not to say behind a man's back what I am not willing to say to his face. To-night I have to say something to Dr. Raymond's face that I would rather say behind his back. [Here Dr. Raymond, amid great laughter, faced about, away from the speaker.] It is the first time in all his career that he has turned his back upon me!

When, in 1887, I was asked to fill for six months the pulpit of Henry Ward Beecher, and then afterward called to be his successor. I entered upon what I recognized to be a very difficult task. He was a great orator, I think the greatest orator of American history, and I am no orator.

He had built up a great church filled with his enthusiastic and devoted admirers. I came to it a comparative stranger. The demand for sittings had been so great that the option of hiring pews at the regular rate was auctioned off, and the premiums were devoted to carrying on the work of the church, and were sufficient for that purpose. With his death this auctioning off of pews came necessarily to an end. Up to the time of his death, Plymouth Church was always filled, and even crowded. For the first year of my ministry it was never crowded, and was rarely really full.

I went to Plymouth Church with the ebb-tide. But it turned, and

became a flood-tide; the money raised for the work of the church was greater than it had been under the old régime; and the church-work went on. When I came, men were saying—men in Plymouth Church and men outside of Plymouth Church—that it was impossible to maintain it in its old locality; that we must tear it down and build smaller, or move away, and all that.

This was not done; yet the church is still going on; and what I want to say to you, ladies and gentlemen, is that I did not change that tide, and in my judgment no preacher could have changed that tide. It was changed by the loyalty of the lay members of Plymouth Church, and among them all there was no man more loyal or more serviceable than Dr. Raymond.

He took a leading part in the Plymouth League, organized almost the day after Mr. Beecher's death, and pledged to co-operation in carrying on the work of the church. It was he who brought to its service his best ability, and more than any other one man reorganized our financial system so that we could have the means to carry on with unabated vigor and enthusiasm the old work of the church.

It was he whose attentive listening and cordial support gave me courage, when, without such inspiration from him and from others, I think my courage would have failed.

Mr. Beecher was a liberal in theology. So was I. In that we agreed. Mr. Beecher was brought up in the old individualistic school of political economy and sociology. My studies had led me in a different direction, toward a larger power of government, and toward a larger function of government. In the sociological sphere I was running counter to the sentiment of the church.

When Dr. Raymond agreed with me, he supported me, and when Dr. Raymond did not agree with me, he equally supported me; for the one thing Dr. Raymond and his associates in the church stood for was the right of the preacher to speak his own conviction, not to record the convictions of the men in the pews before him.

You want to honor Dr. Raymond. Really, gentlemen, it does not take a great deal of self-sacrifice to eat as good a dinner as this in his honor. May I tell you how to honor him? Go back to your own congregations; go back to your own churches; go back to your own ministers; and do for them what he did for me!

You tell us that we do not know the world. We do not. Do you know why? Because when we come to you laymen you put on your best clothes and your finest qualities, and we do not know you, and you do not mean we shall! You say we do not understand life. It is true. You are in the rush and the struggle of it. Tell us what life is. We are idealists. That is what you want of us. We live in the clouds. That is where we belong. We rise up there to get the splendid ideal of what life ought to be, and bring it down to earth to you. Tell us what life *is*, and help us to unite our ideals to the actualities of your business, and we shall be worth something!

You tell us we dare not speak our true convictions. Now, gentlemen, we are not cowards, but we are affected by what a friend of ours has wisely called institutional cowardice. We are afraid to introduce trouble and dissent in our churches; and when we preach the old traditionalism, the old traditionalists make no disturbance, except sometimes by snoring, while the rest make no disturbance, except by staying away. But if we wrestle with the problems of the time, if we deal with the actual questions of to-day, the questions which the young men and young women of our colleges are putting to us, if we take up afresh the problems of the inspiration of the Bible, of God, of immortality, of moral duty, there are scowls on some faces; there are some people leaving their pews; and then what we want is this: that men who believe in honor and in uprightness and in courage and in affection and in truth and in the utterance of convictions of truth, shall come to us and say, "Whether we agree with you or whether we do not, we will stand by you and we will see you through!"

Gentlemen, if you have come here to honor my friend and your friend, Dr. Raymond, then go back to your churches, and go back to your pastors, and do for them what he did for Plymouth Church, and what he did for me! The churches of New York would receive a new baptism, and the ministers of New York would join in giving God thanks for this seventieth birthday of your friend, and my friend.

DR. DOUGLAS: The American Society of Civil Engineers is the oldest of our four National engineering societies; and although, having long ago established its own residence, it does not dwell under the same roof with the three others, it is not, on that account, less cordial in its fraternal relations with them. Recognizing its primacy, and gratefully reciprocating its friendship, we greet with pleasure, as its representative to-night, Mr. John A. BenseL, its distinguished president, who will now address us.

ADDRESS OF JOHN A. BENSEL, PRESIDENT OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS

Mr. Chairman, Guest of the Evening, Ladies and Gentlemen: In a company of this kind, consisting, as I see, mainly of men of affairs, there are some who are gathered to do honor to a man who has devoted his life to the purely professional side of a work in which we are all more or less interested, and that side which does not of itself show "in the dollar."

All of the professions, to a great extent, owe their high position in our social system to men like our honored guest. It is, I think, to men of the type of Dr. Raymond that we owe our knowledge of the laws of Nature. Without men of this type we would know as little of some of the fundamental physical laws which govern us, as

people knew of Egyptian hieroglyphics before the discovery and interpretation of the Rosetta stone.

One thing all professional men can learn from those who devote themselves to the purely professional side. In so far as we are able to appreciate such work, which is always an eternal search for the truth itself; so far as we can attain sufficient knowledge to take some part in it, in an altruistic way; or even if we only gather to honor a man who has devoted his life to it, we too shall be aiming and moving toward that time to be desired, when

"No one shall work for money, and no one shall work for fame,
But each for the joy of the working, and each, in his separate star,
Shall draw the thing as he sees it, for the God of Things as they Are!"

DR. DOUGLAS: It is hardly necessary for me to introduce the next speaker, Mr. George Westinghouse, president of the American Society of Mechanical Engineers, for Mr. George Westinghouse's name is a household word to every intelligent citizen of the world.

**ADDRESS OF GEORGE WESTINGHOUSE, PRESIDENT
OF THE AMERICAN SOCIETY OF MECHANICAL
ENGINEERS**

Mr. Chairman, Dr. Raymond, Ladies and Gentlemen: It is not my purpose to make a speech, but only to express a sentiment for the mechanical engineers as well as for myself.

The celebration of a birthday of one near to us by kinship or friendship, or of one who has by his achievements earned a place in our hearts, is one of the pleasures of our busy lives. On this occasion it is both a privilege and a pleasure to join in greeting our distinguished guest and in extending to him our hearty desire that we may be permitted to celebrate many future anniversaries of his birth.

To realize what he has accomplished for the good of the human race, to appreciate the ripeness of his experience and the soundness of his judgment, is to wish, almost involuntarily, that the clock could be turned back a few years for him, that the world might further profit by a continuance of his labors, aided by accumulated wisdom.

As an individual member, and as president of the American Society of Mechanical Engineers, I offer on behalf of all its members their heartiest congratulations to Dr. Raymond on the seventieth anniversary of his birth.

DR. DOUGLAS: Only those of us who have been president of the American Institute of Mining Engineers know how completely Dr. Raymond has devoted himself to the service and the interests of that society. The twenty-six years of Dr. Raymond's continuous occupancy of the office of secretary of the American Institute of Mining Engineers may have eclipsed, in the memories of many, the fact that the revered David Thomas, elected in 1871 as its first president, accepted that position on the condition that Dr. Raymond (elected as vice-president at the same time) should relieve him of the duties which, by reason of age, he could not discharge; that Dr. Raymond thus became from the beginning the acting president of the Institute; that, upon the resignation of "Father Thomas," a few months later, he was formally appointed to that office; that he retained it by successive annual and unanimous elections, until an amendment of the rules, proposed by himself, cut off the power of the Institute to re-elect him; and that he has thus served four years as president—to say nothing of his two subsequent terms, of two years each, as vice-president. Obviously, I cannot call upon Dr. Raymond to speak to-night for the Institute, but I will do the next best thing by calling on Mr. Robert W. Hunt, who has been twice our president.

ADDRESS OF CAPT. ROBERT W. HUNT, PAST-PRESIDENT OF THE AMERICAN INSTITUTE OF MINING ENGINEERS

Mr. Toastmaster, Dr. Raymond, Ladies and Gentlemen: It is a most delightful task I have assigned me to-night. A labor of love is ever light labor indeed.

Naturally, I felt complimented by being selected as the representative of the American Institute of Mining Engineers in expressing to Dr. Raymond, and to you, how deep is our respect; how great is our love for him; and I only wish I had the power to find eloquent enough words to properly fulfill my mission.

I felt flattered by my selection until I foolishly investigated the workings of your Committee on Speakers. I found in their deliberations they decided that, if possible, this speech should be delivered by a past president of the Institute whose date of office was prior to that of Dr. Raymond's. Investigation showed that to be impossible because he was the second president of the Institute, and his only predecessor, David Thomas, of blessed memory, had passed away in 1882. Then it was decided that the speaker must at least be the oldest of the living past presidents. This brought the matter down to John Fritz (God bless him) and myself, and Uncle John was doubtful about his health permitting his serving. However, somebody said that I must be the elder; at all events, I seemed to be, and so I was appointed, and you are paying the penalty.

What a noble roll of names forms the list of the Institute's deceased past presidents: Thomas, Holley, Shinn, Sterry Hunt, Weeks, Eckley Coxe, Hewitt, Egleston, Rothwell, Drown, and Metcalfe, men whose works, and no two on similar lines, did much to make the history of his day. With a membership from which such leaders could be drawn, is it any wonder the Institute has accomplished so much, and occupies its present proud position among the

technical societies of the world. But in the Institute, as in other technical societies, the membership and the other officers are all well enough, but the real crux of the proposition rests with the secretary.

We have had but three—Coryell, Drown, and, since 1884, our honored guest—twenty-six years of hard work and most loyal devotion. It is only those who have been in official touch with the workings of the Institute who can at all appreciate how untiring has been the labor, and how loving the devotion, and the most wonderful store of knowledge given to work. Was there ever such another living encyclopedia of true information! What wonderful adaptability to circumstances. It can only be realized by those who have listened to the well-chosen and eloquent words of advice delivered to the Arctic Brotherhood in far northern Klondike—information as to the resources and formation explained to the possessors of sunny Mexico—brotherly sentiments of scientists of a kindred race and the same language; uttered in historic Guildhall; hearty words of friendship, appreciation, and admiration spoken in the language of the Fatherland, on the banks, yes, on the very waters of the picturesque Rhine.

The Institute of Mining Engineers has been honored by such services. Our country is proud of such a citizen, a brave soldier, a great scientist, a practical Christian, the best of citizens, a lovable man.

To use his own words addressed to another:

“Whose fame commands our homage, such as bears of envy not a touch,
Because we love the man so much?”

“Who? It needs no quest,
Our honored guest!”

DR. DOUGLAS: Electricity is a silent force, though a patient one. Fortunately, however, the men who have studied electricity have voices; and one of them, representing the American Institute

of Electrical Engineers, will add their testimony to this occasion. I have the pleasure of introducing Mr. Thomas Commerford Martin.

**ADDRESS OF THOMAS COMMERFORD MARTIN, PAST-
PRESIDENT OF THE AMERICAN INSTITUTE
OF ELECTRICAL ENGINEERS**

He who comes to-night to add his tribute to those which others pay Dr. Raymond, enjoys a special honor. It has fallen to my lot to speak for the electrical engineers, closing the long line of engineering professions here represented.

On the score of numbers, the American Institute of Electrical Engineers, now 7,000 strong, might, perhaps, claim priority. We are perfectly satisfied with our relative juvenility. How long we shall enjoy it, I do not know; because, while we still have the airs of adolescence, the cares of maturity are rapidly being forced upon us by the new professions that spring up in our rear.

I was very much interested the other night in the Engineering Building, which we owe to the generosity of one of our members, Andrew Carnegie, at the opening exercises of the Aero Club, which were properly held in the rooms of those earth-worms, the mining engineers, to note that the most intelligent and hearty note of welcome came from Dr. Raymond.

There are other interests and professions crowding in behind, filling up that engineering building, so that it is not much a matter of surprise that we are, by admitting the Aero Club, "adding wings."

To-day we electricals are the minors; and the miners are the ancients. I need not remind you, Mr. Chairman, of the close relation of mining engineering to civilization. It is an old story. Those of us who have followed—and who has not?—the recent crises and phases of the constitutional struggle in England between the peers and the people, must have been reminded more than once of that

classic utterance of Abram S. Hewitt, made, I think, before your own body, that Bessemer was the prophet and priest of democracy. He declared that Bessemer, giving to the world the production of steel, at a low cost, and in great quantity, had ushered in the modern era of universal transportation and cheap food, which had sounded the knell of aristocracy.

It was a wonderful and a fine utterance, and yet to-day we find parallel utterances, and an equal appreciation of the situation; as, for example, in a recent examination at a prominent technical school a student in engineering, in answer to the question, "Why Washington crossed the Delaware?" and what were the political, strategic and sociological reasons for that foolish exploit, explained that the subway under the Hudson had not yet been completed!

The relation between electricity and mining seems, at first sight, very remote; but, Mr. Chairman, we electrical engineers owe to you and your fellow mining engineers practically all the physical resources of our art. We owe to you the zinc, the lead, the sulphuric acid of our batteries. We owe to you the copper and the aluminum of our circuits. To you we owe the iron and steel of our dynamos and our motors. To you we owe the mercury and the silver of our contact-cups, and our batteries of measurement. To you we owe the coal that drives our generating plant. In fact, it might be said that to you we owe everything, except the water in our stock, and that you could not spare.

The relation between electricity and mining is even more personal and intimate than that. Our chairman has referred in graceful terms to the work that has been done by a woman in electricity. Outside of the fact that 90 per cent. of the copper that you present to the world is refined by electrolysis, we electricians have done something in these more subtle lines of investigation which to-day arrest the attention of the world, I refer to the work of Professor and Madame Curie, of which you have already spoken, who have

made us acquainted with those wonderful new elements, radium and polonium. We live in a world of rays; it is a ray world—*Ray-mond*.

And, yet again, we electrical engineers might refer to very many developments in which you have assisted us. I may be permitted to speak of one. Every person in this room is familiar with the history of the Comstock lode, that wonderful tide and flood of wealth which poured out, giving us new States, creating new cities, changing the politics of the country, filling anew the empty coffers of the European principalities, and gilding anew the rusted tips of foreign coronets.

I think we all agree that wealth is good in the right hands, but it seems to me that very little good came out of the flood that ran from Mt. Davidson, except that portion which went into the hands of John Mackay, by means of which he created anew the telegraphic art and industry in the United States, and laid new cables from the Old World to the New, and from the New World to the Orient, mooring all nations in one fleet. John Mackay, the miner, did that for us, and for the world.

Coming to the man we celebrate, let me, as representative of the electrical engineers, join my collective and individual tribute to the man we honor. I know very little of mining except to my sorrow. A friend of mine, to whom I was expressing my sentiments, said that there were one or two men in the profession who had made it respectable, and he mentioned Raymond.

We have lately, under the strain and stress of a great emotion, been trying in our futile way, to estimate and value anew the services to his time and generation of one who has just passed away, Mark Twain, who, as many of you will remember, was with us three years ago at the dinner of the Engineers' Club, and whose soul has passed before its Maker as white as when he came before us that night in his snowy locks and his pure cashmere suit.

There have been great literary geniuses among our mining engineers—Mark Twain, Bret Harte and Joaquin Miller—and you will permit me to be bold enough to-night to associate with those distinguished names that of Rossiter Raymond, the man who has found not only his sermons in the stones, but his songs and his fiction among the fossils and the dust.

The picture has grown not only through a lifetime, but through this evening, as one speaker after another has added his touch to the figure of the great strong virile man in the foreground, and in the background the admiration of his friends, and then around it the iridescent tints of the tender affections, and the home life.

Let me add, in conclusion, that we electrical engineers have yet another hold on Dr. Raymond. In 1885, he was appointed, together with the late Prof. G. W. Plympton, an eminent engineer, and the late Mr. John Reynolds, a distinguished lawyer, as a member of the New York State Board of Electrical Subway Commissioners of the then City of Brooklyn. The Legislature of New York, in a hysteric spasm of ignorant reform, had ordered all electrical conductors to be put underground within a couple of months, and directed the executive officers of municipalities to cut down forthwith all poles bearing such wires which had not been removed before that date. Fortunately, the same or a later Act authorized the appointment of Subway Commissioners in New York and Brooklyn, with authority to grant, in special cases, delays in the execution of this absurd, ignorant and impracticable edict. I happen to know that Dr. Raymond, at the earnest request of his old schoolmate, Seth Low, then Mayor of Brooklyn, accepted the position of Electrical Subway Commissioner of that city, and that, as secretary of the Board, he wrote the four annual reports issued during its official life. The fourth and final report, summing up the work of the Board and discussing the problem of municipal engineering involved in it, was so widely regarded as the best up-to-date statement of the question that, after

the large extra edition printed by the State had been exhausted, many thousands of copies were privately printed and circulated by leading electrical companies, for the instruction of their customers and of the public. I have recently received from the president of one of the companies the expression of an earnest desire to honor Dr. Raymond as "one of the first American electrical subway engineers." I think that, upon such testimony, we can claim him as one of ourselves.

At all events, we electrical engineers, representing, as we do, one of the youngest of the engineering professions, are old enough to have gained from the lips, the life and the writings of Rossiter Raymond an ideal to which we would like to live; toward which all engineers should aspire—a standard which will serve for all the generations of engineers still to be created.

DR. DOUGLAS: I have now the great pleasure of introducing Mr. William Lawrence Saunders, vice-president of the American Institute of Mining Engineers, who will acknowledge the welcome presence of Mrs. Raymond, well known and beloved by us all, as the inseparable live-long companion of her husband, and the loyal friend of his friends.

**ADDRESS OF WILLIAM L. SAUNDERS, VICE-PRESIDENT
OF THE AMERICAN INSTITUTE OF
MINING ENGINEERS**

To all the speakers who have preceded me, and to those who are to follow, I offer my profound sympathy, my admiration and my tears.

As chairman of the Committee on Speakers, I took pains to group them all under one prosy old subject, while I reserved for myself the poetry and the star of this occasion.

Who could not speak on such a subject as Mrs. Raymond? She needs no eulogy, she speaks for herself. Of you, our honored guest, much has been, and more might be, said; but to me it is given to speak of one who is preferred before you, of one who, at this feast, is as welcome as the flowers in May.

Lord Burleigh, in his letters of advice to his son, said: "Use great prudence and circumspection in choosing thy wife, for from thence will spring all thy future good or evil."

Forty-seven years ago was a critical period in the life of our guest. Young, able, ambitious, and yet strong in faith and love, he knew that the glory of young men should be their strength, and so towering in the confidence of twenty-three, he plucked from highest boughs this "flower of wifely patience."

If the gospel be true, that "a prudent wife is from the Lord," then

"There's in you all that we believe of heaven,
Amazing brightness, purity and truth,
Eternal joy and everlasting love."

Look back, sir, through the pleasures of memory on the events of nearly half a century of your active life; think of your greatest joys; recall the applause of the multitude, the honors bestowed, the pomp of power, the satisfaction gained by prosperity, happiness and troops of friends—yes, even up to this night, which should be a proud moment to any man—you will not deny that after all "there's nothing half so sweet in life as love's young dream."

There is a beautiful song called "Let Me Dream Again," in which are the words, "O, do not wake me, let me dream again." To you love's dream has had no awakening since that bright morning when you sailed forth upon the sea of life, with this "gentle, trusting, loving wife."

The story is told of a man who led in everything. He was the captain of the ball-team; the leader in his class; the county chairman and a deacon in the church. In due course he took to himself a wife, and a friend who knew him well was asked how he was getting along since he had married. He had always led every one; and it was said that no woman could ever get ahead of him. "Oh," said the mutual friend, "he is still leading, I suppose; but his wife is just behind, holding the reins!"

We drink to her who is *his* wife and long may she reign!

Here's health to her,

Here's wealth to her,

To her who is his guide, philosopher and friend; to her who is more than a star, for she is a constellation of virtues; she is the comet and he—why, he is only the man in the moon! To her, to her!

On behalf of his friends and yours, madam, it is my privilege to lay these flowers at your feet.

Here is a rose for you for every year of your wedded life. It lifts its face above the thorns as you have always done—as you do now—

"Here mark you, where the bolt of Cupid fell;
It fell upon a fragrant little flower,—
Before milk-white, now crimson with love's wound."

PRESENTATION ADDRESS OF DR. JAMES DOUGLAS

While Dr. Raymond has written excellent stories and his Commentary on the Book of Job is a fine piece of biblical criticism, and the number of departed lives which he has embalmed in sympathetic biographical notices would almost fill an Egyptian mummy pit, it is as a mining engineer, and a legal as well as a mining expert on the mining law, that he has been most eminent and is best known to the world. Along this line I believe none of his work has brought

him more prominently before the world or been more useful to his profession, than his labors in the field and at the desk as United States Commissioner, reporting on the mineral resources of the Rocky Mountains and the Pacific Coast between 1869 and 1876.

At the time when Dr. Raymond undertook this work, the Rocky Mountains and the mining regions west of them were very different places from what they are to-day. It is all very well for us to visit the Rocky Mountains in a Pullman car; but it was another thing to explore them on horseback; or, worse still, in the old-fashioned stage-coach. Nor was the trip altogether free from a certain amount of risk. On one occasion, at least, Dr. Raymond and his party had a lesson in the tactics of Indian warfare, under the hostile tutorship of "Sitting Bull."

Personally, I have seen a good deal of the Rocky Mountains since that time. A good many stories are written about them; but the facts of life are very different. I have made four trips a year to the Pacific Slope since 1880. I have never seen a man shot. I have never carried a pistol myself, or found the slightest need to do it. I have never seen a man hanged. I have never been "held up" in a train or a stage-coach or in any thing else. In fact, the journey is commonplace, and there is no romance at all about it.

But when Dr. Raymond explored the Rocky Mountains in 1868 and the following years, conditions were very different.

There is no truer definition of the spirit of true mining than that given of faith in the Epistle to the Hebrews as "the substance of things hoped for and the evidence of things not seen." Dr. Raymond had faith in God as the God of Nature, under whose government nothing happens by chance, and, therefore, he induced Posepny, Van Hise and others to discuss the genesis of ore deposits, believing that the hidden things of earth and heaven have their origin in the same source, the laws of God. He had, moreover, unbounded faith in the future of the country and in the ability of his country-

men, and especially the Western man, to develop it. I recollect a very eminent scientist in Washington at almost the same period talking about the exaggerated current ideas of the wealth of the country. He swept his hand over the map west of the Missouri, and called it all the Great American Desert, and worthless. Dr. Raymond's reports expressed a very different opinion and infused a very different spirit into his countrymen. In fact, we have ever since been trying to get out of this despised American Desert just a little of what Dr. Raymond foresaw existed in it. As an expert mining engineer and a prophet of the future of mining in the United States our friend, therefore, stands preëminent.

Thinking of the past one cannot help recalling with sympathy and regret some other men who shared Dr. Raymond's faith and enthusiasm, but had not the good fortune to see their anticipations realized. If there was anyone who would have most heartily joined in our greetings to-night it was Benjamin Silliman. It seems almost incredible that he was threatened with expulsion from the National Academy on account of the confidence with which he foretold the magnitude of the oilfields of California and the energy with which he urged their development.

In view of our friend's past career, it is proper that there should be on this table a model—I will not say of what a mine is—but of what a mine might be supposed to be, when designed by a person who knew nothing at all about it. The mine thus modeled must have been working in very good times when the miners, instead of being busy working, were doing the reverse, which generally happens when there is more work to be done than men to do it. The mine in question, however, was a silver mine—rich in native metal.

[Here, at a sign from the chairman, the model parted, revealing a silver table-service, presented to Dr. and Mrs. Raymond.]

In the programme you will find pictures, each of which is a copy of a medallion upon the different pieces of this service, and each

of which is intended to tell of one or another branches of Dr. Raymond's marvelous versatility.

On the tray itself is engraved a beautiful view of the Grand Cañon of the Colorado and that exquisite poem of Dr. Raymond's, the first line of which declares the great truth that the thoughts of God are on earth expressed.

On other pieces of this service appear medallions, corresponding to the illustrations in your hands, and representing Dr. Raymond's experience as a sailor, a student, a soldier, an orator, an author, etc., and copies of the seals of the many societies of which he is an honorary member, and of the universities which have conferred degrees upon him, are engraved upon these pieces of silver. One of these pieces bears also the symbols of the game of chess, indicating an incidental accomplishment of Dr. Raymond's not yet mentioned to-night. I understand that Dr. Raymond once drew a hard-fought two-hour game with Steinitz; that he holds a gold medal as the winner of a chess-tourney; and some of you may remember how, in 1908, a confident group of chess-players on the *Campania* challenged the chess-players on the *Oceanic* to a game by wireless telegraph, and got the worst of it, because Dr. Raymond directed the defence.

But there is one medallion here, which signifies more, Dr. Raymond! to you, and scarcely less to us, than any other of these memorials of your life. I refer to that which combines your picture with that of your beloved wife, and bears the date of your marriage forty-seven years ago.

To the salad of life the sugar and oil should be and are contributed by the wife's sweet influence to counteract the pungency of the mustard and vinegar which we men are only too prone to add in undue proportions. The blend then becomes admirable. In the office and boardroom the wife may not appear in person any more than the sugar, when melted, appears in the tea: but her

calm and restful spirit none the less permeates and controls her husband's life. To what we may have done of usefulness and of good repute, a larger contribution than we ourselves may be inclined to acknowledge, was made by our better halves.

I may be permitted to drop a lump of sugar into the sugar-bowl, but Mrs. Raymond alone must sweeten the first cup of tea poured out for her husband from the teapot of the Memorial Set, which I hereby present to her and to him in the name of their innumerable friends.

ADDRESS OF DR. ROSSITER W. RAYMOND

To the formal and official and representative utterances which have been made here to-night, I hope to reply later in writing, and with due formality. I would fain, however, on the present occasion, separate and retain from each of them the note of personal friendship which has been inextricably blended with the discharge of a representative duty; and with this explanation of my failure to reply in detail, or with special mention, to those surprising and overwhelming utterances, I shall proceed to treat this occasion, as it is described upon the programme, as simply "a meeting of my friends."

You all remember the classic story, told by Benjamin Franklin, and printed in the school-readers of our youth, about the hatter's sign, which, under the successive cross-examinations of his friends, dwindled gradually from the picture of a hat with the legend "Hats made and repaired here," step by step, until at last there was nothing left but the picture of the hat, which told the whole story.

Somewhat in that way my remarks are dwindling in my heart now. Even the shortest and simplest phrase, "I thank you," fades away word by word; for who should thank you, if not I? and whom should I thank, if not you? and what could I do to you but thank you? I had best bow my head and be silent.

However, lest you should suppose that the seventieth anniversary of my birthday had wrought some mysterious and ominous change in my habits, I think I will proceed to say a few words on this interesting occasion!

You could not have shown in word or in act more kindly feeling toward me if I had already died. Indeed, when I contemplate the manner in which you have overwhelmed me with praises and decked me with memorial splendors, I can assure you that you have left no obituary inducement to make me think of dying. If, therefore, any of you have come here to-night with some subtle special sense of a quasi post-mortem obligation, you are hereby discharged from it, and left free to enjoy the entire pleasure of a funeral, with none of its sadness!

Nevertheless, to me such a joy is solemn. Representing, as you do, the friendships of many years, your faces recall to me the faces of hundreds of others whom you and I together have loved and lost awhile. Moreover, your praise humbles while it exalts my spirit. You have described the things I wished to do, and the things I wish I had done, but you have too often, and too much, taken my wish for my deed. Yet there is one thing which I accept without the affectation of a disclaimer. It is true that for more than forty years I have given my life and my strength to the vocation of an interpreter, chronicler, guide and assistant to engineers, rather than to that of a creative and constructive leader.

Dear friends, that was not my ambition. It was not my dream. I am reminded, as of another life, by this first picture in the programme, of the good old Black Ball Liner *Great Western*, on which I embarked as a passenger in 1858, and became the third mate before the long, disastrous voyage was over, and the crippled vessel, with half a rig and half a crew, and on half allowance of water, crawled down through the Irish Channel to reach Liverpool, and surprise the underwriters.

After that initial unforeseen experience, I was brought by sea and land into contact with many peoples and many literatures, in scenes of peace and scenes of war ; and I can now see that I unconsciously obeyed the maxim of Browning,

“Get thy tools ready,
“God will find thee work.”

So that, when my work came to me, I was, without my own prevision or predecision, prepared to understand it, to love it, and, up to the measure of my strength, to do it.

In talking to boys, and persuading them not to shirk disagreeable tasks or duties, I have been accustomed sometimes to say, “Don’t merely do a thing because you like it ; learn to like it because you do it!”—a very good maxim for the education of the young ; but it came out of my observation, and not out of my experience. I have always loved my work.

I want to thank you for the beautiful way in which you have spoken of Mrs. Raymond. It was very hard for me to keep still and not jump up and answer for her on the spur of the moment, but I foresaw that when Saunders got through and Douglas got through, there would be no end to this meeting if I answered all the compliments that they threw at my wife ; so I said, “Douglas, go on ! and Saunders, go on ! Make your speeches and then let me make mine !”

Mrs. Raymond has found some of her dearest, closest and truest friends among my colleagues in the American Institute of Mining Engineers ; and she deserves the recognition you have given her here.

For my own part, I can only say that early matrimony was one of the elements of that providential experience which prepared me for my life, and I think, next to my birth (which somehow seems to have been essential to my career), the most important event in it

was my wedding, the forty-seventh anniversary of which I celebrated last month.

Let me take this occasion, if you will pardon me, for contradicting a story that I see going the rounds of the newspapers. I think it originated with the *Daily Detective*, which claimed to have sent a reporter to Brooklyn, in view of some recent burning questions of politics, to find out where Dr. Raymond stood. According to this story, he rang the bell, and the lady of the house came to the door and said, "What is it you want?" and the reporter said he wished to see Dr. Raymond; and the lady said that Dr. Raymond was out; and he said, "Madam, I guess you will serve just as well. I am sent by the *Daily Detective* to find out what party Dr. Raymond belongs to"; and she said, "Young man, if that is all you want, take a good look at me. I am the party he belongs to!"

Now, that story has not the least basis in fact; but I wish you to carefully weigh my distinct denial. You have been told several times to-night that I know how to say what I mean. Now this is exactly what I mean; this story has no basis in fact; but keep in mind the difference between a mere *fact*, and a profound *truth*!

Besides, I do not believe in complaining. If a man is not at home when a reporter calls, let him take the consequences, and not whine about it; and let him realize that what is printed in the newspapers is not the record of things that actually have been; it is the record of things that might as well have been as not!

So, after many years, I stand here to tell you that I have had a happy, happy life. Many of you know that deep sorrows have been in that life, but I give thanks for those sorrows more than for anything else; for these are they which have brought me, out of great tribulation, the highest joy.

There was an old prophet (Dr. Abbott and Dr. Douglas have set me an example; so let me wander just a little bit into the Bible!) who is reported to have cried to God in his distress, "All thy waves

and thy billows have gone over me!" But his name was Jonah, and he was in a whale's belly, and had no chance to swim, if he had known how. It was not comfortable to him to have the waves and billows go over him. But I am sailor enough yet to have a sailor's love for deep water! When the waves and the billows are *under* you, they are the Everlasting Arms!

So, I say again, I bear witness to a happy, happy life. Overruled in my ambitions again and again, guided often in a way I knew not, I have had always a congenial calling, a blessed home, and troops of friends.

Nor am I growing old. As another has very felicitously said, I am simply growing *older*. Now babes and children grow older, yet we do not accuse them of growing *old*.

What does it matter if I cannot work as many hours a day as I have formerly done? I have not yet got down to the miserable maximum of eight hours! I can still get up before breakfast and labor between meals. What though I do not always instantly recall a face or a name? It takes but a minute for me to know an old friend, and to find him, as he finds me, just where we parted, as affectionate and true as ever. What if my memory, once comprehensive and unerring, breaks down a little with the load of treasures it is now forced to carry? I remember what I want to; and I remember what I like; and my secretary remembers the rest! What if I cannot mount a mustang, or climb a very high, steep mountain (like the one Bayliss used to superintend and get into lawsuits about)? What if I cannot run away from Indians as rapidly as once I could? I know it all—the march, the bivouac, the flight, the ascent, and the descent. I know it so well that my blood still thrills when my young successors go forth in the same high emprise, and I can bid them Godspeed to that conquest of a continent in which I once took part!

I hope to be spared to do some more things in an old man's

way. I have dreamed, for instance, of writing a history of mining operations from the time of Tubal Cain! A few little undertakings like that are still represented in my desk, by notes not yet consigned to the waste-basket. But to-night, whatever may happen hereafter, I can say I have lived, *I have lived!* and you, dear friends, *you* are the best of it all; for love *is* the greatest thing!

And how about the coming days—the days of inevitable decline? Well, love will illumine them, too, while faith and hope look forward, not to an end, but to a new beginning.

Some of you will remember (my friend, Mrs. Hunt, by whose side I have had the honor and pleasure to sit to-night, has just reminded me of it) that wonderful night at White Horse on the Yukon, when we had a shower in the evening, a splendid rainbow at 9 o'clock, sunset at midnight, and sunrise in the same quarter of the heavens swiftly following. The shining bridegroom came out of the same tent of crimson and gold in which he had briefly reposed.

Ah, so may our twilight be—a passage of peace from glory to glory, that it may be said of us, as it was written of the primal world, "There was evening and there was morning—one day!"

ADDRESS OF JOHN FRITZ

Mr. President, Ladies and Gentlemen, Brother Engineers and Friends: We have met here this evening to do honor to our revered and dearly beloved brother, Dr. R. W. Raymond, one of the charter members, the second president and the present secretary of the American Institute of Mining Engineers. His ideal of the business of life is usefulness. He has been the secretary of the Institute for many years. A most important position. The marvelous growth and prosperity of the Institute is largely due to his broad and intelligent management. The honor the engineering profession is conferring on him this evening he richly, so richly, de-

serves, and his brethren, by so doing, are honoring themselves. Personally, he is held in high esteem by his fellow members of the profession, and by all others who know him. He is a man of such rare intelligence that he is competent to take up a diversity of subjects and talk on them intelligently. He is truly a many-sided man, and not the least of his record is that of a gallant soldier in the dark hours of our civil war.

Praise in public of living men is useless, and at times unpleasant, to the most competent. The record of Dr. Raymond's work and worth speaks for him, and is not confined to the United States, but is known to the intelligent people of the world.

To give you some idea of the work he has on hand at all times, I will quote from a letter of the ever-to-be lamented Sidney Gilchrist Thomas, dated March 26, 1881:

"Called on Raymond, a very clever fellow, who is engineer, poet, novelist, editor, man of business, musician, composer and Sunday-School teacher, all at the same time."

Since the above was written, he has had several more duties and many more honors added to his list, including the recognition given to his surpassing ability as an expert on mining law by the conferring on him of the degree of Doctor of Laws by Lehigh University. Where can you find another person that could get through such an amount of work, and judging from work that I know he has done I have no doubt but that he has done it all well.

Personally, he is one of Nature's noblemen; his character is exemplary, and above all, he is a Christian gentleman, a class of men we are sadly in need of.

ADDRESS OF GEORGE W. MAYNARD

It is now more than forty-six years since I first met Dr. Raymond in his office at 90 Broadway, when he was a partner of Dr. Adel-

berg. From that day to this his friendship toward me and his devotion to his profession have been an inspiration which I cannot adequately express in words. His professional work has been an open book; and the previous speakers have so fully covered the ground that what I might say would be only a reiteration.

His field-work as Commissioner of Mining Statistics was not, to my mind, the hardest part of the job; that came when he worked up his notes after reaching home. During the winter nights he would retreat to his den (unheated in order to keep his brain cool) in the garret of his house; wrap a blanket around his feet and legs, and burn the midnight oil; and the result was that remarkable set of reports which gave us our first accurate knowledge of the mineral resources of the West.

What he has achieved in his chosen profession would have been sufficient glory for any other man; but his insatiable love for work led him into other fields. The versatile man is frequently superficial; but this charge cannot be applied to our guest, who has a more accurate knowledge of more things than any other person with whom I have come in contact.

His brilliant testimony and revolutionary theory in the celebrated Eureka-Richmond case was the forerunner of the wide demand for his services in the great mining litigations of the following twenty-five years. It was in the Eureka-Richmond case that the conception of a "mineralized zone" as a legal "lode" was first advanced by him; but after his victory in that case, he warned his clients that this interpretation of the United States statutes must not be pressed so far as to ignore the existence of a defined lode within a "mineralized zone"; and in a subsequent case, in which the "big-vein" theory was relied upon by the opposing party, Dr. Raymond expounded the limitations of that theory, and won a crushing victory in spite of it. During his active participation as an expert counsel or witness in mining cases, he achieved the reputation of having never lost a case,

which was literally true, except as to a single instance, where the decision was given upon other grounds than those of his opinion, which were practically accepted by counsel and judge.

In one case, the opposing party surrendered before trial, after a conference between its expert and Dr. Raymond, in which the latter convinced the former. And other more or less similar instances could be cited.

On another occasion, though not at the time a member of the Bar, he was invited by the United States Supreme Court to address it on a point of mining law; and his exposition of that point was accepted by the Court in its subsequent opinion. Somewhat later, after complying with the necessary legal requirements and passing with honor the necessary examination, he became a member of both the State and the Federal Bar. But, so far as I know, he has seldom or never appeared in court as an attorney, though he has given advice and prepared briefs in many mining and patent cases. Experts engaged in such cases often avail themselves of his advice as to the best way of presenting facts and opinions.

Dr. Raymond's exposition, in successive essays, of "The Law of the Apex," made him a recognized authority on that subject, often quoted in the courts. I have heard him tell of an amusing experience in this connection, when he sat in court, and heard the counsel on both sides make quotations from his writings, accompanied with extravagant eulogies of him, after which the Judge invited him to state his *real* opinion!

He was known in Europe as early as 1873, where he was received with honors at the Freiberg Mining Academy, where he had been a student a dozen years before. In the same year, as president of the American Institute of Mining Engineers, he attended the meeting of the Iron and Steel Institute at Liège, Belgium. In connection with that meeting a limited number of the delegates (including, I believe, all of us who came from America) were invited to dine

with King Leopold in his palace in Brussels, and after the dinner, a brilliant reception took place, during which the delegates from all countries were presented to the King. When Raymond was introduced by Lowthian Bell, His Majesty expressed special pleasure in meeting him, as one who he knew already by reputation and his published works.

ADDRESS OF D. M. RIORDAN

It is almost presumptuous, after listening to the eloquent and scholarly utterances of those who have preceded me, for a sawmill hand from the frontier, who is neither a scientist, nor a scholar, nor an engineer, to undertake to add one word of eulogy to the well-deserved and beautifully expressed encomiums bestowed upon Dr. Raymond upon this occasion. But I may well claim, and I do claim, by right of discovery (although I am the discovered and not the discoverer) and by the grace of God, a place as one who would add a spray of Arizona pine to the garlanded flowers of rhetoric that will be cherished as souvenirs of an occasion, the like of which many of us may never see again. As I sit here, looking upon "Uncle Ros," and dear "Aunt Sally," and Lily, thoughts well up within me which could find neither suggestion nor reason for expression in the mind of any person who has not gone through experiences more or less similar to my own.

Before I ever knew Dr. Raymond in the flesh, I looked upon him as something more than mortal—one of those far-off heroes a body might read about and dream of, but could never hope to see or to know, and "but little lower than the angels." When I met him, I found that he was quite human; but I have never had occasion to reduce the altitude at which my original fancy placed him. As scholar, as engineer, as spiritual adviser, and as friend, he comes up

to the full measure of my anticipations, and yet I find him curiously linked with the rest of us, despite all his recognized and appreciated excellencies, by his fraternal and catholic sympathy. For this I thank God.

Never shall I forget the "bunch" of which Dr. Raymond was the leader, that "blew in" on me at Flagstaff, Arizona, one bright July morning in 1889. As I now recall it, I was all a-quiver with apprehension. They were also probably a-quiver; more likely, however, with curiosity than any other emotion. Their coming, as I found out, happened thus: They had decided in Denver to visit the Grand Cañon, and had practically determined to go in from Peach Springs, on the Santa Fé line. Now, from Peach Springs one can reach the cañon by a drive of about eighteen miles; but one arrives at the river level, and not at the brink of the wall, as one would do by crossing the Colorado Plateau. Moreover, the ride is down a sandy arroyo that develops into a side-cañon, without any special features of commanding interest. But before final decision was clinched, "Uncle Ros" decided to look in the list of members of the Institute, which he had with him, for those who lived nearest to the cañon, and he happened to find among them my name, as that of one who had "paid his dues." Thereupon he decided to inquire about Flagstaff as a starting-point, and wrote to me, inquiring whether he could find at Flagstaff conveniences for visiting the Grand Cañon. To his message I replied, in substance, as I remember:

"Bring on your bunch. I'll do the rest."

They came; they saw; and they "concurred." What chances people will take if a man gets the reputation of paying some of his bills! We went everywhere, and "done" everything we pleased, from the composing of superlative songs to flipping flapjacks! And

here I want to say that I think dear Alfred Raymond* is as much with us on this blessed evening as he was on that original blessed beginning of a glad, enduring friendship. I believe this, because I believe in the Communion of Saints, even if there is only one Saint.

And Lily,† what shall I say of her? Will any of us ever forget the evening we sat on the brink of the cañon, with our feet dangling over, speechless through the endeavor to find adequate words for the overwhelming emotions evoked by that master-piece of creation? Souls may not always "see clear," but eyes nevertheless "grow dim" with reminiscences such as these. Dear old Fernow, who is here with us to-night, knows better how to express what I am vainly struggling to say.

How we sat there in the silence of silences, a mile and a quarter of imprisoned atmosphere beneath our feet, between us and a river as large as the Ohio; and, miracle of miracles, two magnificent sunsets (for the east was crimson and gold, like the west) spreading their ineffable glories above us, while the rosy wreck of a recent thunderstorm sailed, far below, through the cañon, and under a double arch of rainbows, spanning it from wall to wall!

Lily will remember how I said to her, when the silence in the deepening twilight was becoming oppressive, and it seemed imperatively necessary, despite the soul's uplift, to "short-circuit" the current, so to speak, of our thoughts, and get back to earth again, "Well, Lily, if you ever get him here and he sits here holding your hand as I do now, and doesn't say anything that really means business, you just push him over. He's no good."

Now, this is not an Arizona lie, but the incontrovertible truth. After the glory of the heavens had departed, and the cañon had

*Dr. Raymond's son, the author of the songs, who became afterwards his assistant in the work of Secretary of the Institute, and died October 28, 1901. See *Transactions*.

†Dr. Raymond's daughter, now Mrs. H. P. Bellinger.

been drowned in a rising tide of darkness, we walked down to our camp near Hance's cabin, where we found supper and the mail awaiting us; and the first thing Lily Raymond saw was not the supper, but a letter from Paul Bellinger! I don't pretend to know what was in that letter; but I have believed that, somehow or other, the mystic influence of the Grand Cañon was connected with the subsequent circumstance that Miss Raymond became Mrs. Bellinger, allying herself with a worthy member of the American Institute of Mining Engineers, as the daughter of its secretary should do—though I doubt whether that consideration ever occurred to her mind!

Paul Bellinger—more precisely known as H. P. Bellinger, head of two departments in the great works of the Solvay Process Co., of Syracuse, N. Y.—sits with us to-night. I mark him as Exhibit A, and submit him as one of the proofs of my statement. And his son, Alfred Raymond Bellinger, the dear chum and friend, from his birth, of the author of the superlative songs, and the grandson of Dr. Raymond—a boy with the soul of a poet, and with the world yet to conquer, is here also, as Exhibit B. I file them both in proof of this yarn, which may sound hazy and unreal to those of you who have never been to the Grand Cañon, who regard Buffalo as the outermost Western border, and who deem a "Hassayamper" utterly incapable of telling the truth.

On that trip the poem printed in the souvenir menu of this dinner was written by Dr. Raymond in the presence of the grandeur it describes. I regard it as unsurpassed in beauty of diction, and in fervid, yet accurate description. And I bear witness that, on that never-to-be-forgotten trip, there were planted the seeds of friendships, of which our dear friend Rossiter Worthington Raymond was the center, and the vitalizing influence of which will endure not only while this life lasts, but while the life of Love, the only life worth living, endures—after time, as we measure, shall have ceased to be!

ADDRESS OF WILLIAM SCALLON

It is, indeed, unfortunate that Mr. Brunton has been kept away from this feast. He regrets exceedingly that he cannot himself be here to testify in person to the high regard which he entertains for Dr. Raymond. Speaking, as I do, for him and at his suggestion, I cannot better respond to his wishes than by paying a deserved tribute to Dr. Raymond on account of the great and enduring services rendered by him to the jurisprudence of mining. That is a branch of the law with which mining engineers are much concerned, and both Mr. Brunton and Dr. Raymond have been actively engaged in its application to actual cases. It was fortunate for the mining industry of the West, and for the development of this system of law, that Dr. Raymond's active interest was attracted to the subject at a very early date. The first great case in which he appeared was the famous Eureka-Richmond, which is also the most noted of the early reported cases. That suit involved questions of fundamental importance, the correct determination of which was vital to the successful operation of the United States Mining Statute. The decision rendered in it has been, ever since, a beacon light for lawyers and for courts. It was Judge Field who rendered the decision, but it may well be said that it was Dr. Raymond who induced it, and the great jurist himself gave credit to Dr. Raymond for his convincing exposition of the views which the Court adopted; indeed, he adopted also his very words in the statement of these views. There, Dr. Raymond successfully maintained that the law was made for the practical miner and the prospector rather than for the geologist, and should be read in the light of practical experience and interpreted as practical mining men would understand it. The law is, even now, the occasion of so many uncertainties, that one can hardly imagine what condition would have ensued if Dr. Raymond

had not, at that early day, succeeded in his advocacy of this beneficent rule. In the case referred to it was as a witness that Dr. Raymond advanced his views; since then, he has published many writings on the subject of the mining law. These have been the contributions of a publicist to the discussion of a subject of public interest. They have been no less influential in assisting and directing legal and judicial thought. Mr. Curtiss Lindley, the author of a leading text-book on Mining Law, has made acknowledgment, in his preface, of the great value of Dr. Raymond's discussions and writings. For myself, it is with a sense of personal obligation that I speak of these works of Dr. Raymond, for, when I took up the study of Federal mining law, there were no treatises in existence, and his illuminating writings shed a gladsome light on the intricacies of the subject. I recall with ever-increasing pleasure that I had the good fortune of professional association with Dr. Raymond in the last great underground controversy in which he appeared in court. That was at Butte. With him, too, on the same side this time, was his brilliant antagonist of the Eureka case, the learned, lovable and dearly remembered Clarence King, as well as our president, Mr. Brunton, and other able and distinguished men. That they won goes without saying. It is worthy of mention that, as in his first case, so in his last, the Court paid Dr. Raymond the notable compliment of quoting his felicitous language in expressing its own conclusions. Thus, we see that Dr. Raymond has been a luminary of the jurisprudence of mining, as well as of its geological and technical departments.

Dr. Raymond has our unbounded admiration for his masterly versatility and his ripe accomplishments, our gratitude for his many public services and our affection for his endearing social and personal traits.







